



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,613	03/08/2004	Leela S. Tamma	MS1-1880US	1791
22801 7590 06/05/2009				
LEE & HAYES, PLLC 601 W. RIVERSIDE AVENUE SUITE 1400 SPOKANE, WA 99201				
EXAMINER				
CHEN, QING				
ART UNIT		PAPER NUMBER		
2191				
MAIL DATE		DELIVERY MODE		
06/05/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of Allowability

Application No.

10/796,613

Examiner

Qing Chen

Applicant(s)

TAMMA ET AL.

Art Unit

2191

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed on January 30, 2009, entered by the RCE filed on the same date.
2. ☒ The allowed claim(s) is/are 1-7,9,12,13,16 and 18, renumbered as 1-12.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date ____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date ____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date ____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other ____.

DETAILED ACTION

1. This Office action is in response to the amendment filed on January 30, 2009, entered by the RCE filed on the same date.
2. **Claims 1-7, 9, 12, 13, 16, and 18** are pending.
3. **Claims 1, 3, 4, 9, 13, 16, and 18** have been amended.
4. **Claims 8, 10, 11, 14, 15, 17, and 19-31** have been canceled.
5. **Claims 1-7, 9, 12, 13, 16, and 18** are allowed, renumbered as 1-12.
6. The objections to Claims 1-14, 16, 18, and 19 are withdrawn in view of Applicant's amendments to the claims or cancellation of the claims.

Examiner's Amendment

7. An Examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to Applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this Examiner's amendment was given in a telephone interview with Clay D. Hagler (Reg. No. 61,804) on April 9, 2009.

The application has been amended as follows:

AMENDMENTS TO THE CLAIMS

The amendment document filed on January 30, 2009 is considered non-compliant because it has failed to meet the requirements of 37 CFR 1.121—namely, the status identifier for Claim 1 is incorrect. In order for the amendment document to be compliant, please amend the status identifier as follows:

On page 4 of the amendment document, please replace the status identifier for Claim 1, “Proposed Amended,” with the status identifier “Currently Amended.”

Please cancel Claims 14, 15, 17, and 19-31 and amend Claims 1, 13, 16, and 18 as follows:

1. (Currently Amended) A method for generating an installation file for a particular version of a relational database, the method comprising:

given a database system of a particular version, the particular version being unknown prior to execution of the method, determining the particular version of the relational database wherein metadata exists that describes a sequence of multiple versions of the relational database where each version is an upgrade from a previous version, and the particular version is not a first version in the sequence;

automatically determining a first set of scripts, the first set of scripts comprising data definition language (DDL) scripts associated with implementing the particular version of the relational database, wherein the first set of scripts are selected from a plurality of scripts, one or more of the plurality of scripts being not associated with implementing the particular version;

the automatically determining a first set of scripts comprising:

extracting a set A_1 comprising one or more filenames from metadata associated with a first version in the sequence, the one or more filenames associated with a file comprising a data definition language (DDL) script associated with the first version;

iteratively extracting a set A_i comprising zero or more filenames from metadata associated with an i^{th} version of the relational database, the zero or more filenames each associated with a file comprising a data definition language script to be executed when upgrading from version $i - 1$ of the relational database to version i of the relational database, where i varies incrementally from 2 to j , where the particular version is j ;
and

determining the first set of scripts as a set theory union of sets A_1, A_2, \dots, A_j ;

automatically determining a second set of scripts, the second set of scripts comprising data manipulation language (DML) scripts associated with implementing the particular version of the relational database, wherein the second set of scripts are selected from a plurality of scripts, one or more of the plurality of scripts being not associated with implementing the particular version[.];

the automatically determining a second set of scripts comprising:

extracting a set A_1 comprising one or more filenames from metadata associated with a first version in the sequence, the one or more filenames associated with a file comprising a data manipulation language (DML) script associated with the first version;

iteratively extracting a set A_i comprising zero or more filenames from metadata associated with an i^{th} version of the relational database, the zero or more filenames each

associated with a file comprising a data manipulation language [[DML]] script to be executed to add or modify a DML object when upgrading from version $i-1$ of the relational database to version i of the relational database, where i varies incrementally from 2 to j , where the particular version is j ;

iteratively extracting a set B_i comprising zero or more filenames from metadata associated with an i^{th} version of the relational database, the zero or more filenames each associated with a file comprising a DML drop script to be executed to drop a DML object when upgrading from version $i-1$ of the relational database to version i of the relational database, where i varies incrementally from 2 to j , where the particular version is j ;
and

determining the second set of scripts C_j by determining:

$$\begin{aligned}C_2 &= [A_1 \bigcup A_2] - B_2, \\C_3 &= [C_2 \bigcup A_3] - B_3, \\C_4 &= [C_3 \bigcup A_4] - B_4, \\&\dots \\C_j &= [C_{j-1} \bigcup A_j] - B_j.\end{aligned}$$

; and

generating an installation file comprising a set theory union of the first set of scripts and the second set of scripts.

13. (Currently Amended) A method for generating an upgrade file to upgrade version i of a relational database to version j of the relational database, where $j > i$, the method comprising:

determining a set A of data definition language (DDL) scripts that, when executed, perform creates, alters, and drops of DDL objects associated with version i of the relational database, resulting in DDL objects associated with version j of the relational database, wherein the determining a set A comprises:

iteratively extracting sets M_k , each comprising zero or more filenames from metadata associated with a k^{th} version of the relational database, where $i < k \leq j$, the zero or more filenames each associated with a file comprising a data definition language script to be executed when upgrading from version $k-1$ of the relational database to version k of the relational database; and

determining the set A as the set theory union of sets $M_{i+1}, M_{i+2}, \dots, M_j$

$$(A = M_{i+1} \cup M_{i+2} \cup \dots \cup M_j);$$

determining a set B of data manipulation language (DML) scripts that, when executed, create DML objects that are associated with version j of the relational database, but that are not associated with version i of the relational database, wherein the determining a set B comprises:

determining a set E of DML scripts that when executed:

perform alters of DML objects associated with version i and version j of the relational database, but that differ between version i and version j of the relational database; and

perform creates of DML objects that are associated with version j of the relational database but that are not associated with version i of the relational database; and

determining set B as the difference between sets E and C ($B = E - C$);

determining a set C of DML scripts that, when executed, modify DML objects that are associated with both version i and version j of the relational database, but that differ between version i and version j of the relational database, wherein the determining a set C comprises:

determining a set E of DML scripts that when executed:

perform alters of DML objects associated with version i and version j of the relational database, but that differ between version i and version j of the relational database; and

perform creates of DML objects that are associated with version j of the relational database but that are not associated with version i of the relational database;

determining a set F_j of DML scripts that when executed, create DML objects associated with version j of the relational database; and

determining set C as [[the]] a set theory intersection of set E and set F_j

$$(C = E \cap F_j);$$

determining a set D of DML drop scripts that, when executed, drop DML objects that are associated with version i of the relational database, but that are not associated with version j of the relational database, wherein the determining a set D comprises:

determining a set E of DML scripts that when executed:

perform alters of DML objects associated with version i and version j of the relational database, but that differ between version i and version j of the relational database; and

perform creates of DML objects that are associated with version j of the relational database but that are not associated with version i of the relational database;

iteratively determining a set F_x of DML scripts that when executed, drop DML objects associated with version $x - 1$ of the relational database that are not associated with version x of the relational database, where x varies incrementally from $i + 1$ to j ;

determining a set G as the set theory union of sets $F_i, F_{i+1}, F_{i+2}, \dots, F_j$

$$(G = F_i \cup F_{i+1} \cup \dots \cup F_{i+j}); \text{ and}$$

determining set D as the difference between set G and set E ($D = G - E$); and

generating an upgrade file comprising a set theory union of sets A , B , C , and D
 $(A \cup B \cup C \cup D)$.

14. (Canceled)

15. (Canceled)

16. (Currently Amended) The method as recited in claim [[15]] 13 wherein the determining a set E comprises:

iteratively determining a set P_x of DML scripts that when executed will upgrade DML objects from version $x-1$ of the relational database to version x of the relational database, where x varies incrementally from $i+1$ to j ;

iteratively determining a set N_x of DML scripts that when executed will drop DML objects that are associated with version $x-1$ of the relational database but that are not associated with version x of the relational database, where x varies incrementally from $i+2$ to j ;

iteratively determining a set M_x of DML scripts that when executed will upgrade DML objects from version i of the relational database to version x of the relational database, where x varies incrementally from $i+1$ to j , and where:

$$\begin{aligned} M_{i+1} &= P_{i+1} \\ M_{i+2} &= [M_{i+1} \cup P_{i+2}] - N_{i+2} \\ M_{i+3} &= [M_{i+2} \cup P_{i+3}] - N_{i+3} \\ &\dots \end{aligned}$$

$$M_j = [M_{j-1} \cup P_j] - N_j; \text{ and}$$

determining set $E = M_j$.

17. (Canceled)

18. (Currently Amended) The method as recited in claim [[17]] 13 wherein the determining a set F_j comprises:

extracting a set M_1 comprising one or more filenames from metadata associated with a first version in [[the]] a sequence of multiple versions of the relational database, the one or more filenames associated with a file comprising a data manipulation language (DML) script associated with the first version;

iteratively extracting a set M_x comprising zero or more filenames from metadata associated with version x of the relational database, the zero or more filenames each associated with a file comprising a DML script to be executed to add or modify a DML object when upgrading from version $x - 1$ of the relational database to version x of the relational database, where x varies incrementally from 2 to j ;

iteratively extracting a set B_x comprising zero or more filenames from metadata associated with version x of the relational database, the zero or more filenames each associated with a file comprising a DML drop script to be executed to drop a DML object when upgrading from version $x - 1$ of the relational database to version x of the relational database, where x varies incrementally from 2 to j ; and

determining the set F_j by determining:

$$F_2 = [M_1 \cup M_2] - B_2,$$

$$F_3 = [F_2 \cup M_3] - B_3,$$

$$F_4 = [F_3 \cup M_4] - B_4,$$

...

$$F_j = [F_{j-1} \cup M_j] - B_j.$$

19-31. (Canceled)

-- END OF AMENDMENT --

Reasons for Allowance

8. The following is an Examiner's statement of reasons for allowance:

The cited prior art taken alone or in combination fail to teach, in combination with the other claimed limitations,

"the automatically determining a first set of scripts comprising:

extracting a set A_1 comprising one or more filenames from metadata associated with a first version in the sequence, the one or more filenames associated with a file comprising a data definition language (DDL) script associated with the first version;

iteratively extracting a set A_i comprising zero or more filenames from metadata associated with an i^{th} version of the relational database, the zero or more filenames each associated with a file comprising a data definition language script to be executed when upgrading from version $i-1$ of the relational database to version i of the relational

database, where i varies incrementally from 2 to j , where the particular version is j ;
and

determining the first set of scripts as a set theory union of sets A_1, A_2, \dots, A_j ,” and
“the automatically determining a second set of scripts comprising:

extracting a set A_1 comprising one or more filenames from metadata associated
with a first version in the sequence, the one or more filenames associated with a file
comprising a data manipulation language (DML) script associated with the first version;

iteratively extracting a set A_i comprising zero or more filenames from metadata
associated with an i^{th} version of the relational database, the zero or more filenames each
associated with a file comprising a data manipulation language script to be executed to
add or modify a DML object when upgrading from version $i-1$ of the relational database
to version i of the relational database, where i varies incrementally from 2 to j , where
the particular version is j ;

iteratively extracting a set B_i comprising zero or more filenames from metadata
associated with an i^{th} version of the relational database, the zero or more filenames each
associated with a file comprising a DML drop script to be executed to drop a DML object
when upgrading from version $i-1$ of the relational database to version i of the relational
database, where i varies incrementally from 2 to j , where the particular version is j ;
and

determining the second set of scripts C_j by determining:

$$\begin{aligned}C_2 &= [A_1 \cup A_2] - B_2, \\C_3 &= [C_2 \cup A_3] - B_3, \\C_4 &= [C_3 \cup A_4] - B_4, \\&\dots \\C_j &= [C_{j-1} \cup A_j] - B_j.\end{aligned}$$

” as recited in independent Claim 1; and further fail to teach, in combination with the other claimed limitations,

“wherein the determining a set A comprises:

iteratively extracting sets M_k , each comprising zero or more filenames from metadata associated with a k^{th} version of the relational database, where $i < k \leq j$, the zero or more filenames each associated with a file comprising a data definition language script to be executed when upgrading from version $k-1$ of the relational database to version k of the relational database; and

determining the set A as the set theory union of sets $M_{i+1}, M_{i+2}, \dots, M_j$

$$(A = M_{i+1} \cup M_{i+2} \cup \dots \cup M_j),”$$

“wherein the determining a set B comprises:

determining a set E of DML scripts that when executed:

perform alters of DML objects associated with version i and version j of the relational database, but that differ between version i and version j of the relational database; and

perform creates of DML objects that are associated with version j of the relational database but that are not associated with version i of the relational database; and

determining set B as the difference between sets E and C ($B = E - C$),”

“wherein the determining a set C comprises:

determining a set E of DML scripts that when executed:

perform alters of DML objects associated with version i and version j of the relational database, but that differ between version i and version j of the relational database; and

perform creates of DML objects that are associated with version j of the relational database but that are not associated with version i of the relational database;

determining a set F_j of DML scripts that when executed, create DML objects associated with version j of the relational database; and

determining set C as [[the]] a set theory intersection of set E and set F_j

$(C = E \cap F_j)$,” and

“wherein the determining a set D comprises:

determining a set E of DML scripts that when executed:

perform alters of DML objects associated with version i and version j of the relational database, but that differ between version i and version j of the relational database; and

perform creates of DML objects that are associated with version j of the relational database but that are not associated with version i of the relational database;

iteratively determining a set F_x of DML scripts that when executed, drop DML objects associated with version $x - 1$ of the relational database that are not associated with version x of the relational database, where x varies incrementally from $i + 1$ to j ;

determining a set G as the set theory union of sets $F_i, F_{i+1}, F_{i+2}, \dots, F_j$

$$(G = F_i \cup F_{i+1} \cup \dots \cup F_{i+2}); \text{ and}$$

determining set D as the difference between set G and set E ($D = G - E$)” as recited in independent Claim 13.

The closest cited prior art, the combination of US 6,970,876 (hereinafter “Hotti”), US 6,415,299 (hereinafter “Baisley”), and “Set Theory,” July 2002 (hereinafter “Set_Theory”), teaches a method and an arrangement associated with managing database schemas. However, the combination of Hotti, Baisley, and Set_Theory fails to teach

“the automatically determining a first set of scripts comprising:

extracting a set A_1 comprising one or more filenames from metadata associated with a first version in the sequence, the one or more filenames associated with a file comprising a data definition language (DDL) script associated with the first version;

iteratively extracting a set A_i comprising zero or more filenames from metadata associated with an i^{th} version of the relational database, the zero or more filenames each associated with a file comprising a data definition language script to be executed when

upgrading from version $i-1$ of the relational database to version i of the relational database, where i varies incrementally from 2 to j , where the particular version is j ;
and

determining the first set of scripts as a set theory union of sets A_1, A_2, \dots, A_j ;" and
"the automatically determining a second set of scripts comprising:

extracting a set A_i comprising one or more filenames from metadata associated with a first version in the sequence, the one or more filenames associated with a file comprising a data manipulation language (DML) script associated with the first version;

iteratively extracting a set A_i comprising zero or more filenames from metadata associated with an i^{th} version of the relational database, the zero or more filenames each associated with a file comprising a data manipulation language script to be executed to add or modify a DML object when upgrading from version $i-1$ of the relational database to version i of the relational database, where i varies incrementally from 2 to j , where the particular version is j ;

iteratively extracting a set B_i comprising zero or more filenames from metadata associated with an i^{th} version of the relational database, the zero or more filenames each associated with a file comprising a DML drop script to be executed to drop a DML object when upgrading from version $i-1$ of the relational database to version i of the relational database, where i varies incrementally from 2 to j , where the particular version is j ;
and

determining the second set of scripts C_j by determining:

$$\begin{aligned}C_2 &= [A_1 \cup A_2] - B_2, \\C_3 &= [C_2 \cup A_3] - B_3, \\C_4 &= [C_3 \cup A_4] - B_4, \\&\dots \\C_j &= [C_{j-1} \cup A_j] - B_j.\end{aligned}$$

” as recited in independent Claim 1; and further fails to teach

“wherein the determining a set A comprises:

iteratively extracting sets M_k , each comprising zero or more filenames from metadata associated with a k^{th} version of the relational database, where $i < k \leq j$, the zero or more filenames each associated with a file comprising a data definition language script to be executed when upgrading from version $k-1$ of the relational database to version k of the relational database; and

determining the set A as the set theory union of sets $M_{i+1}, M_{i+2}, \dots, M_j$

$$(A = M_{i+1} \cup M_{i+2} \cup \dots \cup M_j),”$$

“wherein the determining a set B comprises:

determining a set E of DML scripts that when executed:

perform alters of DML objects associated with version i and version j of the relational database, but that differ between version i and version j of the relational database; and

perform creates of DML objects that are associated with version j of the relational database but that are not associated with version i of the relational database; and

determining set B as the difference between sets E and C ($B = E - C$),”

“wherein the determining a set C comprises:

determining a set E of DML scripts that when executed:

perform alters of DML objects associated with version i and version j of the relational database, but that differ between version i and version j of the relational database; and

perform creates of DML objects that are associated with version j of the relational database but that are not associated with version i of the relational database;

determining a set F_j of DML scripts that when executed, create DML objects associated with version j of the relational database; and

determining set C as [[the]] a set theory intersection of set E and set F_j

$(C = E \cap F_j)$,” and

“wherein the determining a set D comprises:

determining a set E of DML scripts that when executed:

perform alters of DML objects associated with version i and version j of the relational database, but that differ between version i and version j of the relational database; and

perform creates of DML objects that are associated with version j of the relational database but that are not associated with version i of the relational database;

iteratively determining a set F_x of DML scripts that when executed, drop DML objects associated with version $x - 1$ of the relational database that are not associated with version x of the relational database, where x varies incrementally from $i + 1$ to j ;

determining a set G as the set theory union of sets $F_i, F_{i+1}, F_{i+2}, \dots, F_j$

$$(G = F_i \cup F_{i+1} \cup \dots \cup F_{i+2}) ; \text{ and}$$

determining set D as the difference between set G and set E ($D = G - E$)” as recited in independent Claim 13.

Any comments considered necessary by Applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

Conclusion

9. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Qing Chen whose telephone number is (571) 270-1071. The Examiner can normally be reached on Monday through Thursday from 7:30 AM to 4:00 PM. The Examiner can also be reached on alternate Fridays.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner’s supervisor, Wei Zhen, can be reached on 571-272-3708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2100 Group receptionist whose telephone number is 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Q. C./

Examiner, Art Unit 2191

/Wei Y Zhen/

Supervisory Patent Examiner, Art Unit 2191